Naren Mudivarthy
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Experience

Technical Leader I, Cisco Systems Oct 2021 – Present

Manageability service **Technologies** – Go, gRPC, Python, C

- Played a pivotal role in redesigning and implementing the XR Manageability services architecture, significantly enhancing both scalability and reliability while achieving high availability across multiple critical services
- Leveraged GitHub Copilot's to accelerate development velocity, achieving 15% faster project delivery while maintaining quality standards with 95% test coverage across all pull requests
- Architected and implemented secure device management features using industry-standard gRPC technologies (gNMI, gNOI, gNSI), enhancing operational efficiency and security.
- Led design and development of critical Cisco Manageability services, including:
  - Access Control Layer (ACL) implementation utilizing AuthZ and gNSI Authz services for comprehensive policy management
  - SPIFFE-based authentication and authorization framework, elevating security posture
  - Key architect and primary point of contact for multiple gNSI services including CertZ, CredentialZ, and BootZ
  - Successfully implemented BootConfig gNOI service to streamline device initialization
- Developed scalable services enabling seamless device management throughout the entire lifecycle (Day 0 to Day N), facilitating efficient transitions between multiple operational teams
- Optimized MGBL services for horizontal scalability and reliability, successfully increasing service availability to 99% uptime
- Mentored junior engineers through comprehensive technical guidance and detailed code reviews, enabling them to deliver significant contributions to critical gNOI and gNSI services while successfully implementing complex infrastructure changes

Senior Software Engineer, Cisco Systems Sep 2019 – Oct 2021

- Designed and implemented support Secure ZTP (RFC 8572) and a compliant server.
- Defined workflows for Ownership Voucher (OV) (RFC 8366) Generation and Distribution.
- Major contributor in Design of Manufacturer Authorized Signing Authority to generate OVs

Software Engineer III, Cisco Systems Jun 2015 – Sep 2019

Zero Touch Provisioning **Technologies** – Python, bash, Docker

- Re-engineered the existing infrastructure, which increase the provisioning speed by 30%.
- Helped increase the feature velocity for that component with code and state coverage of ~80%, reducing the operational costs by 10-fold for the customers.
- Lead and mentored team of 3 Junior engineers, providing technical guidance and code reviews that enabled them to make significant contributions.

SPNAC **Technologies** – *Go, InfluxDB, Kapacitor, Kubernetes, Docker, Kafka, NATS*

- Closed-loop Network automation using telemetry data from switches/routers.
- A network health monitoring app with auto remediation deployed as docker into a Kubernetes cluster.
- Implemented cross-platform communication architecture leveraging both Kafka and NATS message buses to enable seamless data flow between applications and infrastructure components based on their specific protocol requirements.

Telemetry **Technologies** – *C, Python, Splunk, Grafana.*

- Designed and implemented infra and backend for event/data collection on Nexus devices.

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Java Developer, Kavi Associates Jun 2013 – Jun 2015
Locomotive Road Failure Prediction **Technologies** – *Cloudera, SpringMVC, Hibernate, Spark, SAS*

- Implemented streaming service to gather real-time data from various locomotive sensors and streamed them to HDFS.

Pretium **Technologies** - *Java, Python, Scala, Spring MVC, Ajax, Hibernate., HighCharts.*

- Implemented a code generator for data collection, cleaning, integration, ETL and data viz.

Full-Stack Developer, XL Academics **Technologies** - *php, mysql, amcharts* Feb 2012 – May 2013

- Implemented chat, financial manager and spend analyzer like Mint.com for FMHS users.

Patents

- U.S. Patent No. 11978063 - "Establishing Ownership of Dual Route Processors (RPs) using Secure Zero-Touch Provisioning (ZTP)" - Issued May 7, 2024
  - Innovative solution for secure device ownership validation in dual route processor environments
  - Role: Primary Inventor (with co-inventor Reda Haddad)

Education

- M.S in Computer Science - **Northern Illinois University** (GPA – 4.0/4.0) May 2013
- Bachelor of Engineering - **JNTU Kakinada**, **India** (GPA – 3.6/4.0) April 2011

Technical Skills

- Languages: C, Go, python, Objective-C, SQL, Java
- Databases: MySQL, PostgreSQL, InfluxDB, Prometheus
- Utilize AI-powered tools (GitHub Copilot, Claude) to automate routine development tasks including commit message generation, test creation, and code generation from documentation, significantly improving productivity and code quality

Certifications

- Deep Learning Nano Degree Foundation Program
- Cloudera Certified Administrator for Apache Hadoop (CCAH)

Side Projects

- OpenCV: Face recognition, Emotion recognition, Object tracking, Motion detector.
- Digital augmentation(image overlay) of image/videos on a paper, placed in front of a camera.
- Deep learning: Image Classification, Face Generator, Language Translation, TV Script Generation, Image styling
- Tekken-py: Python playing Tekken 7.